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A new species of *Ptilomymar* (Hymenoptera, Mymaridae) and a key to the described species

Xiang-Xiang Jin[1], Cheng-De Li[1]

1 *School of Forestry, Northeast Forestry University, Harbin, 150040, China*

Corresponding author: *Cheng-De Li* (lichengde0608@sina.com)

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Abstract

Ptilomymar dianensis **sp. n.** (Hymenoptera, Mymaridae) from southwest China is described and illustrated. A key to the six described species is given. The type specimens are deposited in the insect collections of Northeast Forestry University, China.

Keywords

Chalcidoidea, Mymaridae, *Ptilomymar dianensis*, taxonomy, new species, China

Introduction

Ptilomymar was established by Annecke and Doutt (1961). Currently, this genus contains five described species, *Ptilomymar rete* Annecke & Doutt from Mexico, *P. orientalis* Taguchi from the Philippines (Taguchi, 1972), *P. besucheti* Viggiani from Sri Lanka (Viggiani, 1974), *P. magnificum* Yoshimoto from Canada (Yoshimoto 1990), and *P. dictyon* Hayat & Anis from India (Hayat and Anis 1999). Here we describe a new species of *Ptilomymar* from southwest China. A tentative key to species is provided based on their original descriptions. No types other than that of the new species were examined.

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Materials and methods

Specimens were collected from Yunnan Province (southwest China) using yellow pan traps. Specimens were dissected and mounted dorsally or laterally in Canada balsam on slides following the method described by Noyes (1982) and modified for the Mymaridae by Huber (1988). Photographs were taken with a digital CCD camera attached to an Olympus BX51 compound microscope, and most measurements were made from slide-mounted specimens using an eye-piece reticle. Total body length excluding ovipositor was measured with an eye-piece reticle from alcohol-preserved specimens before being dissected. All measurements are given in micrometers (μm). Specimens studied are deposited in the following institution:

NEFU Northeast Forestry University, Harbin, China.

Morphological terminology and abbreviations are those of Gibson (1997) and Huber (2012), as follows (with some additions):

OD Mid ocellar diameter
OOL Ocular-ocellar length
LOL Least ocellar length
POL Postocellar length
Fl_n Flagellar segment
Gt_n Gastral tergum

Results

Key to species of *Ptilomymar* of the world (based on features from the original descriptions and illustrations).

(Note: females are not known for *orientalis*; males are not known for *dictyon* and *rete*)

1 ♀: flagellum clavate, funicle 8-segmented and clava 1-segmented..... **2**
– ♂: flagellum filiform, 11-segmented **6**
2 Scape distinctly enlarged ventrally in apical half (Fig. 1) **3**
– Scape not distinctly enlarged ventrally in apical half **4**
3 Pedicel about 1.6× as long as fl_1; fl_1 distinctly longer than wide (Fig. 1); fore wing about 3.6× as long as wide, with a triangular dark brown marking behind marginal vein (Fig. 4); metanotum about 0.25× as long as scutellum.... ..... ***P. dianensis* sp. n.**
– Pedicel about 5.0× as long as fl_1; fl_1 as long as or at most slightly longer than wide; fore wing about 5.4× as long as wide, without a broad dark band behind marginal vein; metanotum slightly less than 0.5× as long as scutellum.. ..... ***P. magnificum***

4 Propodeum with strong reticulations lateral to the translucent carinae; petiole not much longer than wide; gt_1 with small translucent carinae..... ***P. rete***

– Propodeum almost smooth lateral to the translucent carinae; petiole at least 2× as long as wide; gt_1 with large translucent carinae **5**

5 Fl_7 and fl_8 each distinctly shorter than $fl_{3–6}$ individually; gt_1 with a pair of scale-like setae on each side; ovipositor not exserted ..... ***P. dictyon***

– $Fl_{3–8}$ almost subequal in length; gt_1 without scale-like setae; ovipositor distinctly exserted..... ***P. besucheti***

6 Propodeum with unbranched spiracular setae ..... ***P. orientalis***

– Propodeum with branched spiracular setae 7

7 Scape distinctly enlarged ventrally in apical half (Fig. 10) **8**

– Scape not distinctly enlarged ventrally in apical half ..... ***P. besucheti***

8 Pedicel about 1.3× as long as fl_1; fl_1 distinctly longer than wide; fore wing with a triangular dark brown marking behind marginal vein (Fig. 11); metanotum 0.25× as long as scutellum ..... ***P. dianensis* sp. n.**

– Pedicel about 3.0× as long as fl_1; fl_1 as long as or at most slightly longer than wide; fore wing without a broad dark band behind marginal vein; metanotum slightly less than 0.5× as long as scutellum..... ***P. magnificum***

Ptilomymar dianensis Jin & Li, sp. n.

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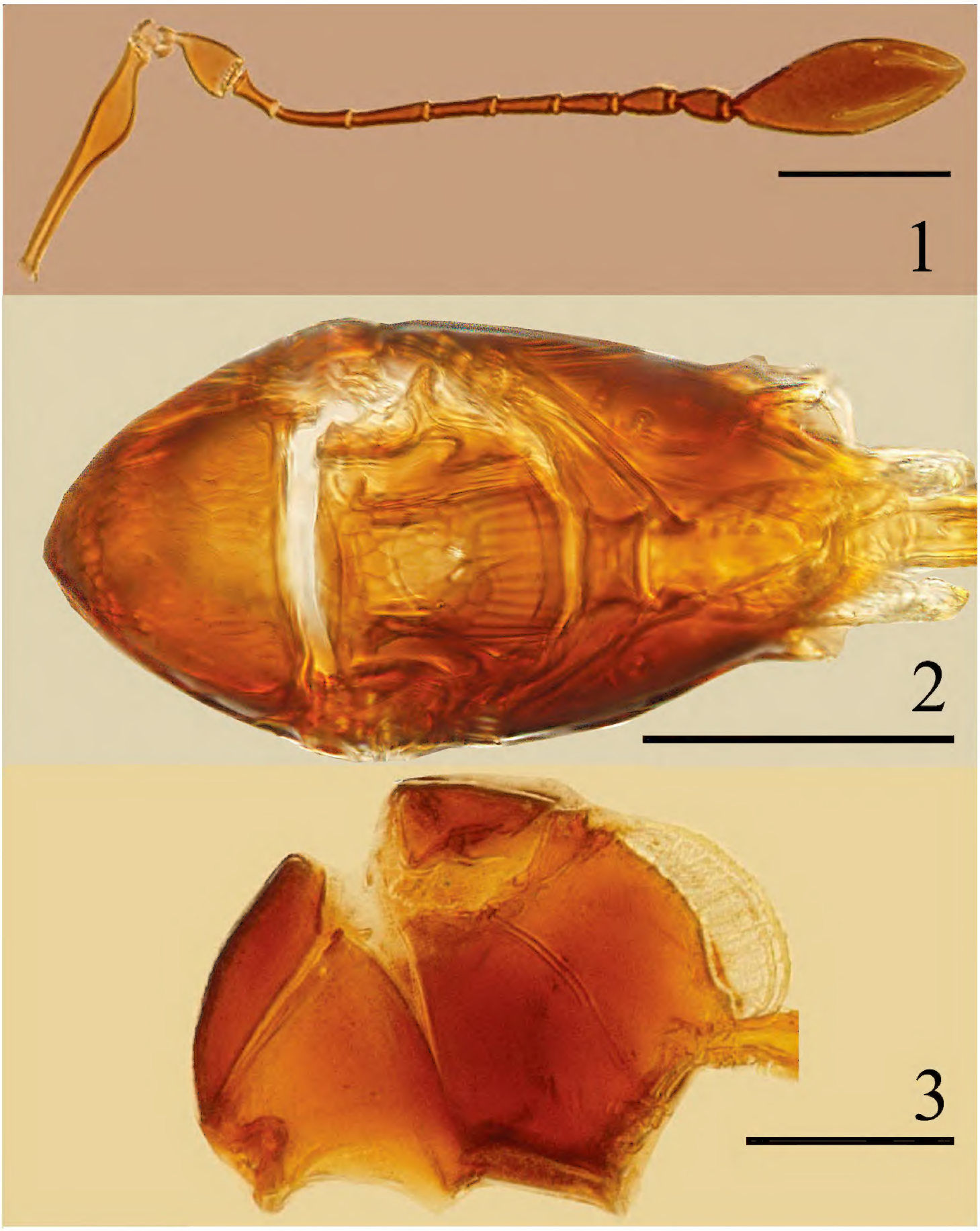
Figs 1–12

Holotype ♀ (NEFU), China, Yunnan Province, Mengla County, Menglun Town, Mannanxing, 11–13.I. 2013, Hui-Lin Han, Ye Chen.

Paratypes. Two males. CHINA. Yunnan. Same data as holotype (1♂, NEFU); Jinghong City, Yexianggu, 17–18.I. 2013, Hui-Lin Han, Ye Chen (1♂, NEFU).

Diagnosis. Scape distinctly enlarged ventrally in apical half; pedicel about 1.6× as long as fl_1; fl_1 distinctly longer than wide; fore wing 3.62× as long as wide, with a triangular dark brown marking behind marginal vein, and a narrow brown strip just beyond venation; gt_1 with large translucent carinae; ovipositor distinctly exserted.

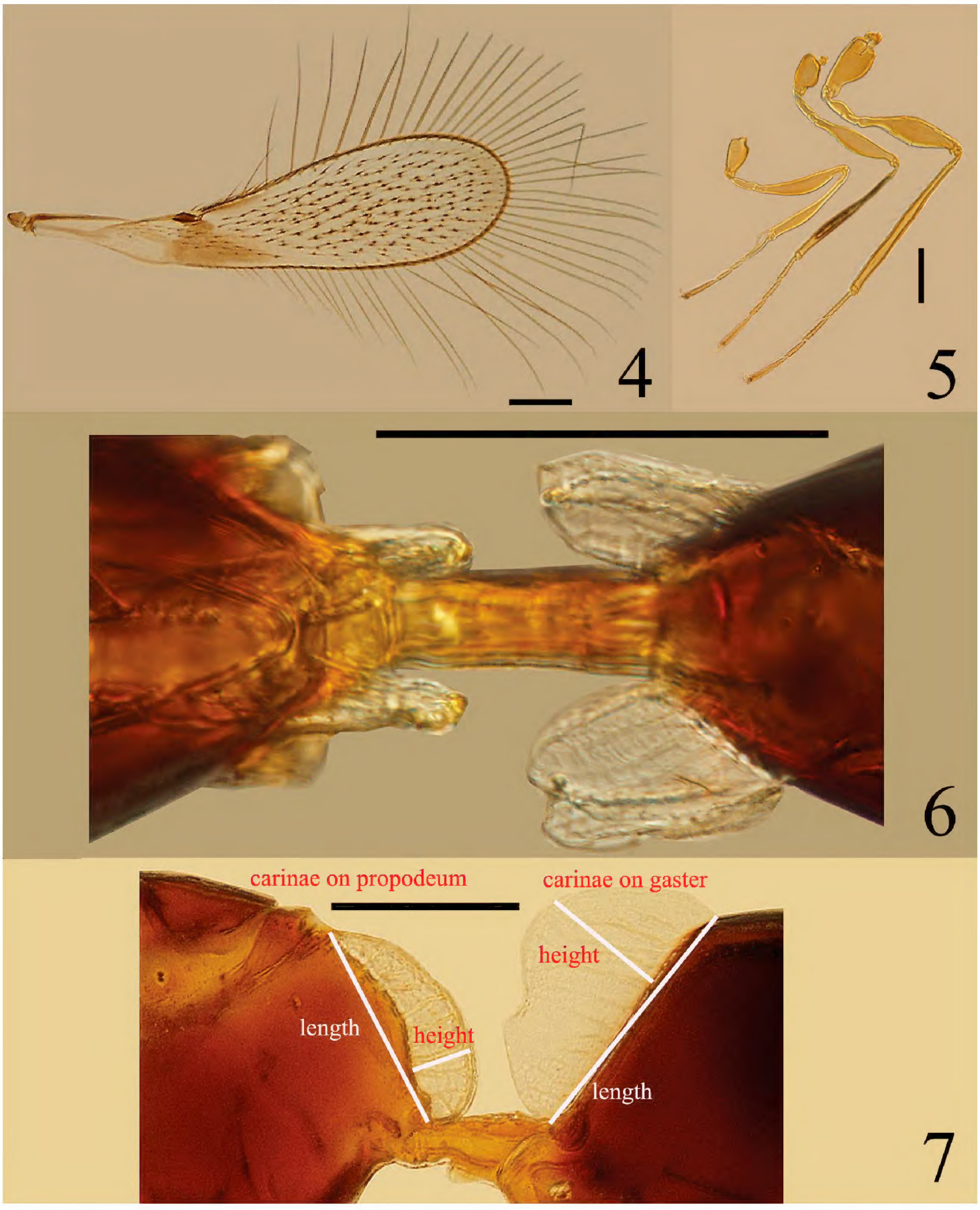
Ptilomymar dianensis is distinguished from most other species except *P. magnificum* by the shape of the scape that is distinctly enlarged ventrally in apical half (the scape not distinctly enlarged ventrally in apical half in the remaining species), *P. dianensis* differs from *P. magnificum* by its longer fl_1 (shorter in *P. magnificum*), wider fore wing (narrower in *P. magnificum*), and shorter metanotum, 0.25× as long as scutellum (longer metanotum, slightly less than 0.5× as long as scutellum in *P. magnificum*). *P. dianensis* differs from *P. rete* by its larger translucent carinae (smaller in *P. rete*) and distinctly exserted ovipositor (not distinctly exserted in *P. rete*). *P. dianensis* differs from *P. orientalis* by its branched spiracular setae on propodeum (unbranched spiracular setae in *P. orientalis*), wider fore wing (narrower in *P. orientalis*), and larger facets (smaller in *P. orientalis*). *P. dianensis* differs from *P. besucheti* and *P. dictyon* by its longer fl_1 (shorter in the latter two), wider fore



Figures 1–3. *Ptilomymar dianensis* sp. n., holotype female: **1** antenna **2** mesosoma, dorsal **3** mesosoma, lateral. Scale bars=100 μm.

wing (narrower in the latter two), distinctly exserted ovipositor (not exserted in *P. dictyon*), $fl_{3–8}$ almost subequal in length (fl_7 and fl_8 each distinctly shorter than $fl_{3–6}$ individually in *P. dictyon*).

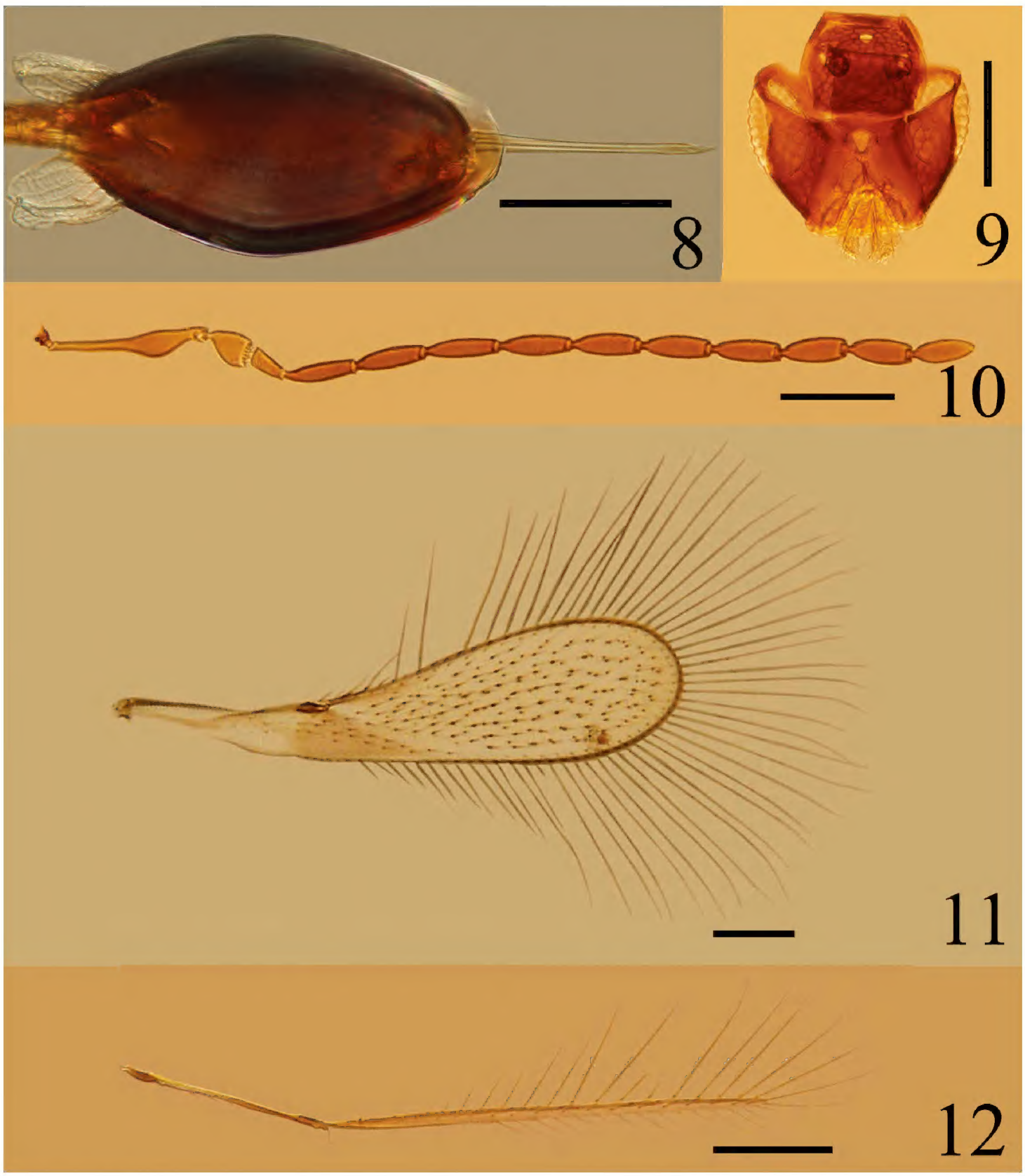
Description. Female. Head dark brown with ocelli black. Antenna brown with fl_1 slightly lighter, scape and pedicel yellowish-brown. Mesosoma dark brown with



Figures 4–7. *Ptilomymar dianensis* sp. n., holotype female: **4** fore wing **5** legs **6** carinae on mesosoma and metasoma, dorsal **7** carinae on mesosoma and metasoma, lateral. Scale bars=100 μm.

pronotum and petiole brown. Fore wing hyaline, with a triangular dark brown marking behind marginal vein, and a narrow brown strip just beyond venation. Venation brown with stigmal vein dark brown. Legs yellowish-brown with last tarsal segments brown. Metasoma dark brown with ovipositor brown.

Head. Eye about 1.5× as long as wide; facets large, each nearly the size of an ocellus. Vertex 0.82× as long as wide, with strong reticulate sculpture; POL about 6.5× as long



Figures 8–12. *Ptilomymar dianensis* sp. n., holotype female: **8** gaster. Paratype male: **9** head, dorsal **10** antenna **11** fore wing **12** hind wing. Scale bars=100 μm.

as OOL. Antenna (Fig. 1). Scape 5.45× as long as wide, longitudinally striate, distinctly enlarged ventrally in apical half; pedicel almost smooth, 1.31× as long as wide, and 1.55× as long as fl_1; fl_1 distinctly longer than wide; fl_2 slightly longer than pedicel, 1.64× as long as fl_1; clava 2.48× as long as wide.

Mesosoma (Fig. 2) 1.95× as long as wide. Mesoscutum 0.58× as long as wide, with strong reticulation. Scutellum with strong reticulation on anterior scutellum and longitudinal striate on posterior scutellum; with a pair of campaniform sensilla nearer posterior margin than anterior margin. Metanotum 0.25× as long as scutellum. Mid panel

of metanotum subrectangle, with longitudinal striate. Propodeum slightly shorter than mesoscutum, without reticulate sculpture, with 2 large subparallel translucent carinae (Figs 2, 3, 6, 7) and 2 branched setae, each on lateral to spiracle.

Fore wing (Fig. 4) 3.62× as long as wide, longest marginal setae 1.38× as long as greatest wing width. Stigmal vein with 4 campaniform sensilla apically.

Legs (Fig. 5) with femora, especially metafemur, swollen medially. Mesocoxa without teeth-like structures on the posterior surface.

Metasoma. Petiole (Fig. 6) about 2.8× as long as wide. Gaster (Fig. 8) oblong, Gt_1 (Fig. 7) with 2 large translucent carinae and 1 smaller carinae and a pair of scale-like setae on each side; ovipositor distinctly exserted, about 0.7× as long as mesotibia.

Measurements (length/width, μm): Body length: 500. OD 9.6, OOL 9.6, LOL 33.6, POL 62.4. Antenna: scape 144.0/ 26.4, pedicel 40.8/ 31.2, fl_1 26.4, fl_2 43.2, fl_3 45.6, fl_4 38.4, fl_5 36.0, fl_6 33.6, fl_7 33.6, fl_8 31.2, clava 136.8/ 55.2. Fore wing 752.4/ 207.9, longest marginal setae 287.1. Propodeum with carinae length 115.2, height 33.6 (measured in lateral view – Fig. 3); gaster with dorsolateral carina length 144, height 67.2 (measured in lateral view – Fig. 7), and ventromedian carina length 120, height 33.6. Ovipositor 201.6.

Male. Similar to female except as follows. Antenna (Fig. 10) with all the flagellar segments longer than wide. Fore wing (Fig. 11) 3.89–4.06× as long as wide. Hind wing (Fig. 12) 0.76–0.78× as long as fore wing, disc with only one row of setae.

Measurements (length/width, μm): Body length 550–580. Antenna: scape 139.2–144.0/ 21.6–26.4, pedicel 43.2/ 28.8–31.2, fl_1 33.6, fl_2 64.8, fl_3 67.2, fl_4 38.4, fl_5 64.8, fl_6 62.4, fl_7 62.4, fl_8 62.4, fl_9 60.0, fl_{10} 60.0, fl_{11} 57.6. Fore wing 643.5–693.0/ 158.4–178.2, hind wing 504.9–524.7.

Host. Unknown.

Etymology. Chinese: dian=Yunnan Province, and refers to the distribution of the species in the Yunnan Province of China.

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